

## Refine Search

### Search Results -

Terms	Documents
L1 and (simplex same duplex)	10

**Database:****US Pre-Grant Publication Full-Text Database**

US Patents Full-Text Database

US OCR Full-Text Database

EPO Abstracts Database

JPO Abstracts Database

Derwent World Patents Index

IBM Technical Disclosure Bulletins

**Search:**

L2

Refine Search

Recall Text



Clear

Interrupt

### Search History

**DATE:** Wednesday, August 10, 2005   [Printable Copy](#)   [Create Case](#)**Set Name Query**

side by side

*DB=PGPB; PLUR=YES; OP=OR*L2   L1 and (simplex same duplex)L1   cable\$6 same (backplane or "back plane") same (board or card)**Hit Count Set Name**

result set

10   L2576   L1

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
(709/253  370/257  370/276  370/454  710/14  710/314  710/300  710/301  710/302  710/303  710/304  710/105  710/62  710/72  710/305  712/30  712/32).ccls.	6187

**Database:**

US Pre-Grant Publication Full-Text Database  
US Patents Full-Text Database  
US OCR Full-Text Database  
EPO Abstracts Database  
JPO Abstracts Database  
Derwent World Patents Index  
IBM Technical Disclosure Bulletins

**Search:**

L1

Refine Search

Recall Text

Clear

Interrupt

### Search History

**DATE:** Wednesday, August 10, 2005   [Printable Copy](#)   [Create Case](#)**Set Name Query**

side by side

**Hit Count Set Name**

result set

DB=PGPB,USPT,USOC; PLUR=YES; OP=OR

L1   710/14,314,300-304,105,62,72,305;712/30,32;370/257,276,454;709/253.ccls.

6187

L1

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
L1 and L3	3

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L4

Refine Search

Recall Text



Clear

Interrupt

### Search History

DATE: Wednesday, August 10, 2005   [Printable Copy](#)   [Create Case](#)

#### Set Name Query

side by side

DB=PGPB,USPT,USOC; PLUR=YES; OP=OR

L4   L1 and L3L3   L2 and (simplex same duplex)L2   cable\$6 same (backplane or "back plane") same (board or card)L1   710/14,314,300-304,105,62,72,305;712/30,32;370/257,276,454;709/253.ccls.

#### Hit Count Set Name

result set

3   L436   L31765   L26187   L1

END OF SEARCH HISTORY

Refine Search

Search Results -

Terms	Documents
(710/316  711/112  326/30).ccls.	3374

Database:

US Pre-Grant Publication Full-Text Database  
US Patents Full-Text Database  
US OCR Full-Text Database  
EPO Abstracts Database  
JPO Abstracts Database  
Derwent World Patents Index  
IBM Technical Disclosure Bulletins

Search:

L1

Refine Search

Recall Text

Clear

Interrupt

Search History

DATE: Wednesday, August 10, 2005    [Printable Copy](#)    [Create Case](#)

<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
	DB=PGPB,USPT,USOC; PLUR=YES; OP=OR		
<u>L1</u>	710/316;711/112;326/30.ccls.	3374	<u>L1</u>

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
L1 and L3	0

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L4





### Search History

DATE: Wednesday, August 10, 2005    [Printable Copy](#)    [Create Case](#)

#### Set Name Query

side by side

DB=PGPB,USPT,USOC; PLUR=YES; OP=OR

L4    l1 and L3L3    L2 and (simplex same duplex)L2    cable\$6 same (backplane or "back plane") same (board or card)L1    710/316;711/112;326/30.ccls.

#### Hit Count Set Name

result set

0    L436    L31765    L23374    L1

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
L1 same simplex same duplex	5

**Database:**

US Pre-Grant Publication Full-Text Database  
US Patents Full-Text Database  
US OCR Full-Text Database  
EPO Abstracts Database  
JPO Abstracts Database  
Derwent World Patents Index  
IBM Technical Disclosure Bulletins

**Search:**

L2

Refine Search

Recall Text



Clear

Interrupt

### Search History

**DATE:** Wednesday, August 10, 2005   [Printable Copy](#)   [Create Case](#)**Set Name Query**

side by side

*DB=PGPB,USPT,USOC; PLUR=YES; OP=OR*L2   L1 same simplex same duplexL1   cable\$6 same (backplane or (back adj 1 plane)) same (board or card)**Hit Count Set Name**

result set

5   L21765   L1

END OF SEARCH HISTORY

# Refine Search

## Search Results -

Terms	Documents
L2	0

Database:

US Pre-Grant Publication Full-Text Database

US Patents Full-Text Database

US OCR Full-Text Database

EPO Abstracts Database

JPO Abstracts Database

Derwent World Patents Index

IBM Technical Disclosure Bulletins

Search:

L3

▲

▼

Refine Search

Recall Text

Clear

Interrupt

## Search History

DATE: Wednesday, August 10, 2005    [Printable Copy](#)    [Create Case](#)

<u>Set Name</u> <u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side		result set
DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR		
<u>L3</u> L2	0	<u>L3</u>
DB=PGPB,USPT,USOC; PLUR=YES; OP=OR		
<u>L2</u> L1 same simplex same duplex	5	<u>L2</u>
<u>L1</u> cable\$6 same (backplane or (back adj1 plane)) same (board or card)	1765	<u>L1</u>

END OF SEARCH HISTORY

Freeform Search

Database:

US Pre-Grant Publication Full-Text Database

US Patents Full-Text Database

US OCR Full-Text Database

EPO Abstracts Database

JPO Abstracts Database

Derwent World Patents Index

IBM Technical Disclosure Bulletins

Term:

L5 and (simplex or duplex)

Display:

10

Documents in Display Format:

Tl

Starting with Number

1

Generate:

☐ Hit List

☒ Hit Count

☐ Side by Side

☐ Image

Search

Clear

Interrupt

Search History

DATE: Wednesday, August 10, 2005    [Printable Copy](#)    [Create Case](#)

<u>Set Name</u> <u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side		result set
DB=USPT; PLUR=YES; OP=OR		
L6    L5 and (simplex or duplex)	3	L6
L5    11.ab.	70	L5
DB=PGPB,USPT,USOC; PLUR=YES; OP=OR		
L4    (5495584  5572685  5613074  5745795)! [pn]	4	L4
DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR		
L3    L2	0	L3
DB=PGPB,USPT,USOC; PLUR=YES; OP=OR		
L2    L1 same simplex same duplex	5	L2
L1    cable\$6 same (backplane or (back adj1 plane)) same (board or card)	1765	L1

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
L1 and (simplex same duplex)	26

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L8

Refine Search

Recall Text

Clear

Interrupt

### Search History

DATE: Wednesday, August 10, 2005 [Printable Copy](#) [Create Case](#)

#### Set Name Query

side by side

#### Hit Count Set Name

result set

DB=USPT; PLUR=YES; OP=OR

L8 L1 and (simplex same duplex) 26 L8

L7 L1 and (simplex or duplex) 132 L7

L6 L5 and (simplex or duplex) 3 L6

L5 11.ab. 70 L5

DB=PGPB,USPT,USOC; PLUR=YES; OP=OR

L4 (5495584| 5572685| 5613074| 5745795)! [pn] 4 L4

DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR

L3 L2 0 L3

DB=PGPB,USPT,USOC; PLUR=YES; OP=OR

L2 L1 same simplex same duplex 5 L2

L1 cable\$6 same (backplane or (back adj1 plane)) same (board or card) 1765 L1

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
L4 and (simplex same duplex)	1

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L5

Refine Search

Recall Text



Clear

Interrupt

### Search History

 DATE: Wednesday, August 10, 2005    [Printable Copy](#)    [Create Case](#)

#### Set Name Query

side by side

#### Hit Count Set Name

result set

DB=PGPB,USPT,USOC; PLUR=YES; OP=OR

<u>L5</u>	L4 and (simplex same duplex)	1	<u>L5</u>
<u>L4</u>	L3 same (backplane or "back plane") same (card or board)	46	<u>L4</u>
<u>L3</u>	((without or "no" ) adj2 cable) or cableless\$2	10131	<u>L3</u>
<u>L2</u>	(without or "no" ) adj2 cable	9883	<u>L2</u>
<u>L1</u>	"without cable"	1556	<u>L1</u>

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
L4 and (simplex same duplex)	0

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L6





### Search History

DATE: Wednesday, August 10, 2005    [Printable Copy](#)    [Create Case](#)

#### Set Name Query

side by side

#### Hit Count Set Name

result set

DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR

L6    L4 and (simplex same duplex)

0    L6

DB=PGPB,USPT,USOC; PLUR=YES; OP=OR

L5    L4 and (simplex same duplex)

1    L5

L4    L3 same (backplane or "back plane") same (card or board)

46    L4

L3    ((without or "no" ) adj2 cable) or cableless\$2

10131    L3

L2    (without or "no" ) adj2 cable

9883    L2

L1    "without cable"

1556    L1

END OF SEARCH HISTORY

EAST - [Untitled1:1]

File View Edit Tools Window Help

Drafts

Pending

Active

L1: (1184) cable\$6 same

L2: (26) 11 and (simple

Failed

Saved

Favorites

Tagged (0)

UDC

Queue

Trash

Search

List

Browse

Queue

Clear

DBs

USPAT

Default operator: OR

Plurals

Highlight all hit terms initially

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comment	Error	Definit	Er
1	BRS	L1	1184	cable\$6 same (backplane or "back p	USPA	2005/08/1				
2	BRS	L2	26	11 and (simplex same duplex)	USPA	2005/08/1				

Start

EAST - [...]

**EAST - [Untitled1:1]**

File View Edit Tools Window Help

☐ Drafts  
☐ Pending  
☒ Active  
     L1: (1184) cable\$6 same  
     L2: (26) 11 and (simple  
☐ Failed  
☐ Saved  
☐ Favorites  
☐ Tagged (0)  
☐ UDC  
☐ Queue  
☐ Trash

Search

DBs:  USPAT ☒ Plural ☒ Highlight all hit terms initially

Default operator:  OR

**11 and (simplex same duplex)**

	U	I	Document ID	Issue Dat	Pages	Title	Current OR	Current X
1	<input type="checkbox"/>	<input type="checkbox"/>	US 6901458 B2	20050531	6	Multi-mode SCSI backplane and detection	710/14	710/18; 714/48
2	<input type="checkbox"/>	<input type="checkbox"/>	US 6811321 B1	20041102	9	Optical connector for simultaneously connecti	385/59	385/53; 385/60;
3	<input type="checkbox"/>	<input type="checkbox"/>	US 6314102 B1	20011106	54	Telecommunications system for providing bo	370/395.6	370/463; 370/465;
4	<input type="checkbox"/>	<input type="checkbox"/>	US 6094715 A	20000725	66	SIMD/MIMD processing synchronization	712/20	712/203
5	<input type="checkbox"/>	<input type="checkbox"/>	US 6055582 A	20000425	19	SCSI duplex-ready backplane for selective	710/14	710/107; 710/314
6	<input type="checkbox"/>	<input type="checkbox"/>	US 5966528 A	19991012	67	SIMD/MIMD array processor with vector p	712/222	712/10; 712/203;
7	<input type="checkbox"/>	<input type="checkbox"/>	US 5963746 A	19991005	77	Fully distributed processing memory eleme	712/20	709/238; 712/14
8	<input type="checkbox"/>	<input type="checkbox"/>	US 5963745 A	19991005	66	APAP I/O programmable router	712/13	712/10; 712/12;
9	<input type="checkbox"/>	<input type="checkbox"/>	US 5878241 A	19990302	68	Partitioning of processing elements in	712/203	712/20
10	<input type="checkbox"/>	<input type="checkbox"/>	US 5870619 A	19990209	63	Array processor with asynchronous availabili	712/20	712/203
11	<input type="checkbox"/>	<input type="checkbox"/>	US 5842031	19981124	67	Advanced parallel array	712/23	

EAST - [Untitled1:1]

File View Edit Tools Window Help

Drafts

Pending

Active

L1: (1) cableless\$2 san

L2: (1888) cable same

L3: (4) 12 and (SCSI sa

Failed

Saved

Favorites

Tagged (0)

UDC

Queue

Trash

Search List Browse Queue Clear

DBs: USPAT

Default operator: OR

☒ Plurals
 ☒ Highlight all hit terms initially

BRS form IS&R form Image Text HTML

	Type	L #	Hits	Search Text	DBs	Time Stam	Comment	Error	Definit	Er
1	BRS	L1	1	cableless\$2 same (backplane or "back p	USPA T	2005/06/2 4 13:31				
2	BRS	L2	1888	cable same (backplane or "back plane")	USPA T	2005/06/2 4 13:31				
3	BRS	L3	4	12 and (SCSI same simplex same mode)	USPA T	2005/06/2 4 13:32				

Start

EAST - [...]

**EAST - [Untitled1:1]**

File View Edit Tools Window Help

☐ Drafts  
☐ Pending  
☒ Active  
     L1: (1) cableless\$2 san  
     L2: (1888) cable same  
     L3: (4) 12 and (SCSI sa  
☐ Failed  
☐ Saved  
☐ Favorites  
☐ Tagged (0)  
☐ UDC  
☐ Queue  
☐ Trash

Search List Browse Queue Clear  
 DBs USPAT ☒ Plurals  
 Default operator: OR ☐ Highlight all hit terms initially

12 and (SCSI same simplex same mode)

☐ BRS form ☐ IS&R form ☐ Image ☐ Text ☐ HTML

	U	I	Document ID	Issue Dat	Pages	Title	Current OR	Current XR
1	<input type="checkbox"/>	<input type="checkbox"/>	US 6901458 B2	20050531	6	Multi-mode SCSI backplane and detection	710/14	710/18; 714/48
2	<input type="checkbox"/>	<input type="checkbox"/>	US 6055582 A	20000425	19	SCSI duplex-ready backplane for selective	710/14	710/107; 710/314
3	<input type="checkbox"/>	<input type="checkbox"/>	US 5396596 A	19950307	26	Mass data storage and retrieval system provid	711/113	
4	<input type="checkbox"/>	<input type="checkbox"/>	US 5337414 A	19940809	25	Mass data storage and retrieval system	710/52	714/3



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Search Results

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Results for "( cable\*&lt;in&gt;metadata ) &lt;and&gt; ( backplane&lt;in&gt;metadata ) &lt;and&gt; ( board or car..."

Your search matched 14 of 1222090 documents.

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☐ Check to search only within this results set

 Display Format:
 ☒ Citation
 ☐ Citation & Abstract

» Key

IEEE JNL IEEE Journal or Magazine

IEEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IEEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

Select Article Information

- |                          |  |
|--------------------------|--|
| <input type="checkbox"/> | <b>1. Comparison of test methods for the characterization of shielding of board-to-backplane and board-to-cable connectors</b><br>Martens, L.; Madou, A.; Kone, L.; Demoulin, B.; Sjoberg, P.; Anton, A.; Van Koetsem, J.; Hoffmann, H.; Schricker, U.;<br>Electromagnetic Compatibility, IEEE Transactions on<br>Volume 42, Issue 4, Nov. 2000 Page(s):427 - 440<br>Digital Object Identifier 10.1109/15.902312<br><a href="#">AbstractPlus</a>   <a href="#">References</a>   Full Text: <a href="#">PDF</a> (304 KB) IEEE JNL               |
| <input type="checkbox"/> | <b>2. Shielding of backplane interconnection technology systems (EU SOBITS project)</b><br>Martens, L.; Madou, A.; Vanlandschoot, B.; Kone, L.; Demoulin, B.; Sjoberg, P.; Anton, A.; Van Den Torren, L.; Van<br>Koetsem, J.; Hoffmann, H.; Schricker, U.;<br>Electromagnetic Compatibility, 1998. 1998 IEEE International Symposium on<br>Volume 2, 24-28 Aug. 1998 Page(s):818 - 822 vol.2<br>Digital Object Identifier 10.1109/ISEMC.1998.750312<br><a href="#">AbstractPlus</a>   Full Text: <a href="#">PDF</a> (396 KB) IEEE CNF         |
| <input type="checkbox"/> | <b>3. Design advances in PCB/backplane interconnects for the propagation of high speed Gb/s digital signals</b><br>Gisin, F.; Pantic-Tanner, Z.;<br>Telecommunications in Modern Satellite, Cable and Broadcasting Service, 2003. TELSIKS 2003. 6th International<br>Conference on<br>Volume 1, 1-3 Oct. 2003 Page(s):184 - 191 vol.1<br>Digital Object Identifier 10.1109/TELSKS.2003.1246211<br><a href="#">AbstractPlus</a>   Full Text: <a href="#">PDF</a> (752 KB) IEEE CNF  |
| <input type="checkbox"/> | <b>4. Backplane interconnect test in a boundary-scan environment</b><br>Wuodiann Ke;<br>Test Conference, 1996. Proceedings., International<br>20-25 Oct. 1996 Page(s):717 - 724<br>Digital Object Identifier 10.1109/TEST.1996.557130<br><a href="#">AbstractPlus</a>   Full Text: <a href="#">PDF</a> (628 KB) IEEE CNF   |
| <input type="checkbox"/> | <b>5. High-speed signal transmission at the front of a bookshelf packaging system</b><br>Koike, S.; Kaizu, K.; Kishimoto, T.;<br>Components, Packaging, and Manufacturing Technology, Part B: Advanced Packaging, IEEE Transactions on [see also<br>Components, Hybrids, and Manufacturing Technology, IEEE Transactions on]<br>Volume 20, Issue 4, Nov. 1997 Page(s):353 - 360<br>Digital Object Identifier 10.1109/96.641503<br><a href="#">AbstractPlus</a>   <a href="#">References</a>   Full Text: <a href="#">PDF</a> (236 KB) IEEE JNL |
| <input type="checkbox"/> | <b>6. EMI associated with inter-board connection for module-on-backplane and stacked-card configurations</b><br>Ye, X.; Nadolny, J.; Drewniak, J.L.; Hubing, T.H.; Vaudoren, T.P.; DuBroff, D.E.;<br>Electromagnetic Compatibility, 1999 IEEE International Symposium on   |

Volume 2, 2-6 Aug. 1999 Page(s):797 - 802 vol.2  
 Digital Object Identifier 10.1109/IEMC.1999.810121  
[AbstractPlus](#) | Full Text: [PDE](#)(520 KB) IEEE CNF



#### 7. Signal conditioning electronics and packaging for the Alcator C-MOD tokamak

Parkin, W.;  
 Fusion Engineering, 1991. Proceedings., 14th IEEE/NPSS Symposium on  
 30 Sept.-3 Oct. 1991 Page(s):790 - 793 vol.2  
 Digital Object Identifier 10.1109/FUSION.1991.218729  
[AbstractPlus](#) | Full Text: [PDE](#)(408 KB) IEEE CNF



#### 8. FDTD and experimental investigation of EMI from stacked-card PCB configurations

Hockanson, D.M.; Xiaoning Ye; Drewniak, J.L.; Hubing, T.H.; Van Doren, T.P.; Dubroff, R.E.;  
 Electromagnetic Compatibility, IEEE Transactions on  
 Volume 43, Issue 1, Feb. 2001 Page(s):1 - 10  
 Digital Object Identifier 10.1109/15.917923  
[AbstractPlus](#) | [References](#) | Full Text: [PDE](#)(396 KB) IEEE JNL



#### 9. The implementation of universal switch fabric for switch and router systems

YongWook Ra; Byungjun Ahn;  
 Communications, 2004 and the 5th International Symposium on Multi-Dimensional Mobile Communications Proceedings.  
 The 2004 Joint Conference of the 10th Asia-Pacific Conference on  
 Volume 1, 29 Aug.-1 Sept. 2004 Page(s):254 - 257 vol.1  
[AbstractPlus](#) | Full Text: [PDE](#)(665 KB) IEEE CNF



#### 10. Experimental and numerical investigations of fundamental radiation mechanisms in PCB designs with attached cables

Hockanson, D.M.; Lam, C.-W.; Drewniak, J.L.; Hubing, T.H.; Van Doren, T.P.;  
 Electromagnetic Compatibility, 1996. Symposium Record. IEEE 1996 International Symposium on  
 19-23 Aug. 1996 Page(s):305 - 310  
 Digital Object Identifier 10.1109/IEMC.1996.561248  
[AbstractPlus](#) | Full Text: [PDE](#)(584 KB) IEEE CNF



#### 11. Honeywell FLASH fiber optic motherboard evaluations

Stange, K.;  
 Digital Avionics Systems Conference, 1996., 15th AIAA/IEEE  
 27-31 Oct. 1996 Page(s):167 - 174  
 Digital Object Identifier 10.1109/DASC.1996.559153  
[AbstractPlus](#) | Full Text: [PDE](#)(1084 KB) IEEE CNF



#### 12. Packaging of optoelectronics and passive optics in a high capacity transmission terminal

Grimes, G.J.; Sherman, C.J.; Garvert, R.W.; Peck, S.R.; Honea, W.K.; Helton, J.S.; Jamison, W.W.; Parzygnat, W.J.;  
 Bonanni, R.; Nadler, R.J.; Rausch, K.S.; Thomas, J.J.; Blyler, L.L., Jr.;  
 Electronic Components and Technology Conference, 1993. Proceedings., 43rd  
 1-4 June 1993 Page(s):718 - 724  
 Digital Object Identifier 10.1109/ECTC.1993.346770  
[AbstractPlus](#) | Full Text: [PDE](#)(688 KB) IEEE CNF



#### 13. Transfer impedance measurements on the shielding of a multi-pins board-to-board connector

De Langhe, P.; Martens, L.; De Zutter, D.; Morlion, D.;  
 Electromagnetic Compatibility, 1994. Symposium Record. Compatibility in the Loop. IEEE International Symposium on  
 22-26 Aug. 1994 Page(s):453 - 455  
 Digital Object Identifier 10.1109/IEMC.1994.385606  
[AbstractPlus](#) | Full Text: [PDE](#)(156 KB) IEEE CNF



#### 14. Packaging of VCSEL arrays for cost-effective interconnects at <10 meters

Hibbs-Brenner, M.; Lehman, J.; Yue Liu; Johnson, K.; Morgan, R.; Strzelecka, E.; Skogman, R.;  
 Electronic Components and Technology Conference, 1999. 1999 Proceedings. 49th  
 1-4 June 1999 Page(s):747 - 752  
 Digital Object Identifier 10.1109/ECTC.1999.776265  
[AbstractPlus](#) | Full Text: [PDE](#)(816 KB) IEEE CNF





AbstractPlus

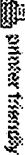
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## Design advances in PCB/backplane interconnects for the propagation of high speed Gb/s digital signals

Gisin, F., Panik, Tanner, Z.  
Backplane Technol. & Signal Integrity Design, San Jose, CA, USA

This paper appears in: **Telecommunications in Modern Satellite, Cable and Broadcasting Service, 2003. TELSIKS 2003. 6th International Conference on**  
Publication Date: 1-3-Oct. 2003  
Volume: 1

On page(s): 184 - 191 vol. 1  
Number of Pages: 2 vol.xv+841  
ISSN:

INSPEC Accession Number:8006870  
Digital Object Identifier: 10.1109/ELSKS.2003.1246211  
Posted online: 2003-11-17 15:41:37.0

### Abstract

Over the past five years tremendous advances have been made in the design of copper-based transmission line interconnects capable of propagating high-speed broadband digital signals over long lengths of printed circuit boards (PCBs) and backplanes. Data rates of 5 Gb/s transmitted over a single differential pair routed across more than one meter of PCB and backplane interconnect using low-cost FR-4 dielectric material is no longer all that unusual. And leading industry experts predict there is still plenty of bandwidth left to extend copper interconnects to well beyond 10 Gb/s. The high performance interconnects needed to sustain these high data rates are attained through the application of many different engineering design and manufacturing disciplines including active prepost compensation circuits, cost effective mixed-dielectric PCB and backplane stackups, and innovative PCB via interconnect geometries. By applying these interdisciplinary technologies to the design of copper-based interconnects, signal attenuation and deterministic jitter distortions caused by frequency dependent interconnect materials and energy-storing geometric structures are minimized.

Index Terms

Inspec

### Controlled Indexing

data integrity, dielectric materials, digital signals, intersymbol interference, optical backplanes, printed circuit design, printed circuits, transmission lines

### Non-controlled Indexing

5.Gbit/s ISI, PCB, active prepost compensation circuit, backplane interconnection, backplane stackup, copper interconnection, copper-based transmission line, data rate transmission, dielectric material, differential pair routing, energy-storing geometric structure, engineering design, frequency dependent interconnect material, high speed, broadband digital signal propagation, interconnect geometry, interdisciplinary technology, intersymbol interference, jitter distortion, mixed-dielectric PCB, printed circuit board, signal attenuation, signal integrity

**Author Keywords**

Not Available

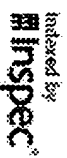
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